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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,008	05/24/2001	Ki Ho Kim	MM4434	5212

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EXAMINER	
LEMMA, SAMSON B	
ART UNIT	**PAPER NUMBER**
2132	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/866,008	KIM, KI HO	
	Examiner	Art Unit	
	Samson B Lemma	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **1-26** have been examined.

Specification

2. The disclosure is objected to because of the following informalities:

- On page 14, lines 4-5, the following has been recited referring to figure 5, "Referring Fig 5, the reception/**encryption** process will be described in detail". It should have been written as "Referring Fig 5, the reception/**decryption** process will be described in detail".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1,8-10,17-19, 25-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul W. Dent. (hereinafter referred to as **Dent**)(U.S. Patent No. 6,571,212) in

view of Signal design and system operation of **Globalstar** (hereinafter referred to as **Globalstar**) (reference U)

5. **As per claims 1, 8-10, 17-19, 25-26 Dent** discloses an apparatus for securing communication information in CDMA communication system comprising:

- A vocoder encoding the input analog signal as an information bit having a predetermined size and generating a vocoder packet information bit;(Column 5, line 36-51; figure 1, ref. Num "28")

- An encryptor encrypting the vocoder packet information bit from said vocoder; (column 6, lines 8-27; figure 1, ref. Num "32")

- A CDMA framer adding a frame quality indicator and the encoder tail bits to the encrypted vocoder packet information bit from said encryptor to configure as a CDMA frame; (Figure 1, ref. Num "34"; column 6, lines 28-36)

- A CDMA frame transmitter transmitting the CDMA frame which passes a convolutional encoder, interleaver, and modulator in sequence, to a base station through an assigned frequency band; (Column 6, lines 28-36; column 6, lines 52-53; figure 1, ref. Num "38"; figure 2)

- A CDMA frame receiver receiving a signal from the base station and reproducing the CDMA frame; (Column 6, lines 52-53; figure 1, ref. Num "42")

- A CDMA deframer extracting the encrypted vocoder packet information bit from the CDMA frame reproduced by said CDMA frame receiver; (Column 6, lines 61-63; figure 1, ref. Num " 46")

- A decryptor decrypting the encrypted vocoder packet information bit extracted by said CDMA deframer; (Column 7, lines 1-9; figure 1, ref. Num " 48") and

- A vocoder decoding the decrypted vocoder packet information bit from said decryptor as an analog signal, (figure 1, ref. Num " 52" ; column 7, lines 38-44) wherein

- Said encryptor encrypts the vocoder packet information bit using a block cipher and a security key, said decryptor decrypts the encrypted vocoder packet information bit using said block cipher and a security key shared with the other mobile. (Column 6, lines 9-21; figure 1, ref. Num " 32" , ref. Num " 48" , ref. Num " KEY") (Block cipher has been recited on column 6, lines 18-21 but the bitwise encryption has been preferred by the reference Dent due to the percentage of error)

Dent does not explicitly disclose

- A CDMA framer adding a frame quality indicator and the encoder tail bits to the packet information to configure as a CDMA frame;

- A CDMA frame transmitter transmitting the CDMA frame which passes a convolutional encoder,

However, In the same field of endeavor, **Globalstar** discloses

- A CDMA framer adding a frame quality indicator and the encoder tail bits to the packet information bit to configure as a CDMA frame; (Figure 6 and figure 7)

- A CDMA frame transmitter transmitting the CDMA frame which passes a convolutional encoder, (Figure 6 and figure 7)

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to employ the adding of a frame quality indicator and the encoder tail bits and the passing of CDMA frame through convolutional encoder as per teachings of **Globalstar** in to the method taught **by Dent** in order to secure the communication information in CDMA communication system.

6. **Claims 2-7; 11-16; 20-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul W. Dent. (hereinafter referred to as Dent)(U.S. Patent No. 6,571,212) in view of Signal design and system operation of **Globalstar** (hereinafter referred to as **Globalstar**) (reference U) further in view of A-jung Kim (hereinafter referred to as **Kim**) (U.S. Pub. No 2001/0038695 A1)

7. **As per claims 2, 11 and 20,** the combination of Dent and Globalstar recites the use of block cipher but also indicates that the bitwise encryption/decryption method is better in terms of the percentage of errors. (Column 6, lines 18-21).

The combination of Dent and Globalstar does not explicitly disclose that the block cipher is DES.

However, In the same field of endeavor, **Kim** discloses that the block cipher in particular DES is used in CDMA communication. (Page 2, ref. Num "[0031]"; figure 2, ref. Num "270").

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to combine DES algorithm used as per teachings of Kim in to the method taught by the combinations of Dent and Globalstar in order to secure the communication system.

8. **As per claims 3, 12,** the combination of Dent and Globalstar recites the use of block cipher but also indicates that the bitwise encryption/decryption method is better in terms of the percentage of errors. (Column 6, lines 18-21).

The combination of Dent and Globalstar does not explicitly disclose that said encryptor performs or bypasses the encryption by a security mode that a user enters.

However, In the same field of endeavor, **Kim** discloses that when the user inputs specific key at the point of starting the communication, a transmitter terminal is set to or taken off a security mode and a receiver terminal receiving the specific key signal . At the time of setting the security mode, the secret key of block cipher to be used for encryption.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to combine the features of the encryption by the security mode that a user enters as per teachings of Kim in to the method taught by the combinations of Dent and Globalstar in order to provide control to the users.

9. **As per claims 4, 13 and 21** the combination of Dent and Globalstar and Kim discloses the method as applied to claims 3, 12 and 19 above. Furthermore Kim discloses the apparatus wherein said encryptor generates a predetermined pattern corresponding to the security mode ON or OFF and adds the generated pattern to the information bit of the traffic channel and transmits it to the other mobile, wherein said decryptor performs or bypasses the decryption by said pattern. (Figure 2 ; figure 2, ref Num "240" ;Page 2, ref. Num "[0021], [0022]")

10. **As per claims 5, 14 and 22** the combination of Dent and Globalstar and Kim discloses the method as applied to claims 4, 13 and 21 above. Furthermore Kim discloses the apparatus wherein said encryptor adds the security key to the information bit of the traffic channel when the security mode is set to ON, wherein said decryptor decrypts the encrypted vocoder packet information bit by said security key included in the information bit of the traffic channel. (Figure 2, reference "Security Mode" ; Page 2, ref. Num "[0021], [0022]")

11. **As per claims 6, 15 and 23** the combination of Dent and Globalstar and Kim discloses the method as applied to claims 4, 13 and 22 above. Furthermore Kim discloses the apparatus wherein said encryptor encrypts the security key by a master key when the security mode is set to ON and adds the encrypted security key to the information bit of the traffic channel, wherein said decryptor decrypts the encrypted security key included in the information bit of the traffic channel by said master key, and decrypts the encrypted vocoder packet information bit by the decrypted security key.(Page 2, ref. Num "[0022]")

12. **As per claims 7, 16 and 24** the combination of Dent and Globalstar and Kim discloses the method as applied to claims 4, 13 and 22 above. Furthermore Kim discloses the apparatus wherein said encryptor is provided with multiple security keys and adds an index of the security key selected among the multiple security keys to the information bit of the traffic channel when the security mode is set to ON, and encrypts the vocoder packet information bit by the selected security key, wherein said decryptor shares the multiple security keys provided in said encryptor, and decrypts the encrypted vocoder packet information bit using the security key selected by the index included in the information bit of the traffic channel. (Figure 2 ; Page 2, ref. Num "[0023]")

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See PTO-Form 892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samson B Lemma whose telephone number is 571-272-3806. The examiner can normally be reached on Monday-Friday (8:00 am---4: 30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BARRON JR GILBERTO can be reached on. The fax phone number for the organization where this application or proceeding is assigned is 571-272-3799. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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